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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,808	10/01/2003	Koichi Otsuki	Q77778	8787
23373	7590	12/09/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			FIDLER, SHELBY LEE	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 12/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/674,808

Applicant(s)

OTSUKI, KOICHI

Examiner

Shelby Fidler

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 9-16 is/are allowed.  
6) ☒ Claim(s) 1,3-7,17,18 and 20-23 is/are rejected.  
7) ☒ Claim(s) 2,8,19,24 and 25 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 23 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

***Response to Amendment***

Responsive to amendment filed on 10/24/2005.

***Response to Arguments***

Applicant's arguments with respect to claims 1-3, 9-11, and 13-17 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 112***

Claim 3 recites the limitation "test pattern generated in step (b)" in line 6. There is no antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 7, 17, 18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Otsuki et al. (US 6267519 B1).

**With regards to claim 1**, Otsuki teaches a bi-directional printing method (col. 1, line 56) using a printing apparatus (printer 20, Figure 1), the printing apparatus being capable of mounting thereon a first ink set (achromatic colors, col. 1, line 64) and a second ink set (chromatic colors, col. 2, line 1) that have mutually different combinations of inks and being capable of using a first bi-directional print mode that selectively uses inks included in the first ink set (monochrome printing mode, col. 1, line 63) and a second bi-directional print mode that selectively uses inks in the second ink set (color printing mode, col. 1, line 67) so that a

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combination of inks used in the first bi-directional print mode is different from a combination of inks used in the second bi-directional print mode, the printing method comprising the steps of:

(a) providing a plurality of position adjustment values including a first position adjustment value for the first bi-directional print mode (col. 1, lines 63-67) and a second position adjustment value for the second bi-directional print mode (col. 1, line 67 – col. 2, line 3) as position adjustment values for reducing misalignments of dot forming positions on forward passes and backward passes of main scanning (col. 2, lines 48-49);

(b) selecting a position adjustment value for a bi-directional print mode used by the printing apparatus out of the plurality of position adjustment values (Figure 16); and

(c) adjusting dot forming positions along the main scanning direction during the bi-directional printing based on the selected position adjustment value (col. 11, lines 5-7).

**With regards to claim 3 and 20,** Otsuki further teaches the steps:

(d) generating a test pattern to be printed, wherein the test pattern can be used to test misalignments of the dot forming positions (S11, Figure 12); and

(e) allowing a user to set a position adjustment value (S12, Figure 12) that is to be stored in the position adjustment value storage according to a printed result of the test pattern (col. 3, lines 45-47), wherein the test pattern generated is a test pattern suitable for one of the first bi-directional print mode and the second bi-directional print mode (Figures 18c-d show the monochrome mode ink in the same pattern as the color print mode ink).

**With regards to claim 7,** Otsuki teaches using the position adjustment value for another bi-directional print mode when the position adjustment value for a third bi-directional print mode to be used to by the printing apparatus is not prepared in advance (col. 3, lines 19-23).

With regards to claim 17, Otsuki teaches a computer program product for implementing bi-directional printing (col. 3, lines 57-58), a computer readable medium, and a computer program stored on the computer readable medium (col. 3, lines 55-58). Similar arguments apply as from claim 1.

With regards to claim 18, Otsuki teaches a bi-directional printing method (col. 1, line 56) comprising:

providing a printing apparatus capable of mounting thereon a first ink set or a second ink set associated with a first bi-directional print mode (col. 1, lines 63-65) and a second bi-directional print mode, respectively (col. 2, line 67 - col. 3, line 3);

storing a first plurality of position adjustment values associated with the first bi-directional print mode and a second plurality of position adjustment values associated with the second bi-directional print mode (col. 11, lines 10-13);

selecting a first position adjustment value or a second position adjustment value (Figure 16); and

adjusting dot forming positions along a main scanning direction during bi-directional printing based on the selected first position adjustment value or second position adjustment value (col. 11, lines 5-7).

### ***Claim Rejections - 35 USC § 103***

Claims 4, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuki (US 6267519 B1) as applied to claim 1 above, and further in view of Olsen et al. (US 6454381), and further in view of Otsuki (US 6746101 B2).

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**With regards to claim 4**, Otsuki (US 6267519) does not teach an ink cartridge comprising a memory. Olsen discloses an ink cartridge that contains an ink set comprises a memory that stores information including types of contained inks (col. 4, lines 50-54) and, based on the information read out from the memory, the print modes available to the printing apparatus (col. 1, lines 59-63). Neither Otsuki (US 6267519) nor Olsen teach displaying available print modes and allowing a user to select a print mode. Otsuki (US 6746101 B2) teaches displaying a plurality of print modes available to the printing apparatus (Figure 15) and allowing a user to select a print mode that is to be subject to setting of the position adjustment value out of the plurality of available print modes (mode settings selection box, Figure 15).

**With regards to claim 21**, Otsuki (US 6267519) teaches that selecting a first position adjustment value or a second position adjustment value, comprises:

printing a test pattern using the plurality of position adjustment values for the selected bi-directional print mode (S11, Figure 12); and

selecting a position adjustment value according to the printed test pattern (Figure 16).

Otsuki (US 6267519) does not teach an ink cartridge comprising a memory. Olsen discloses that the first ink set is contained in a first cartridge and the second ink set is contained in a second cartridge (col. 4, lines 63-65) and each ink cartridge comprises a memory in which is stored information including the types of inks included in the ink cartridge (col. 4, lines 50-54). Neither Otsuki (US 6267519) nor Olsen teach displaying available print modes and allowing a user to select a print mode.

Otsuki (US 6746101 B2) teaches displaying a plurality of available bi-directional print modes from among the displayed bi-directional print modes (Figure 15); and

selecting a bi-directional print mode from among the displayed bi-directional print modes (mode settings selection box, Figure 15).

**With regards to claim 22**, Otsuki does not teach an ink cartridge comprising a memory. Olsen teaches that the first ink set is contained in a first ink cartridge and the second ink set is contained in a second ink cartridge (col. 4, lines 63-65) and the first and second ink cartridges each comprise a memory in which is stored information including the types of inks included in the ink cartridge (col. 4, lines 50-54); and

wherein a first position adjustment value or a second position adjustment value is selected according to information stored in the memory of the first ink cartridge or the second ink cartridge (col. 3, lines 22-27).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Otsuki's (US 6267519) ink cartridge with Olsen's memory. The motivation for doing so, as taught by Olsen, is so that print mode control may select a print mode based on the information stored on the cartridge memory (col. 1, lines 55-63). It would have been further obvious to a person of ordinary skill in the art to modify Otsuki's (US 6267519) print mode selection with Otsuki's (US 6746101 B2) user selection process. The motivation for doing so, as taught by Otsuki (US 6746101 B2), is to allow the user to select the printing mode (col. 21, lines 10-14).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuki (6267519 B1) in view of Anderson et al. (US 6588872).

**With regards to claim 5**, Otsuki does not expressly teach an ink cartridge comprising a memory. Anderson discloses an ink cartridge that contains an ink set comprises a memory (col.

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2, lines 9-10) that stores information used to set the position adjustment value (col. 2, lines 13-15), and the method further comprises:

(a') setting the position adjustment value based on the information read out from the memory (steps 104-108, Figure 6).

At the time of invention it would have been obvious to a person of ordinary skill in the art to modify Otsuki's ink cartridge with Anderson's memory and use thereof. The motivation for doing so, as taught by Anderson, is to reduce swath-to-swath skew (col. 1, line 49) specific to the cartridges (col. 2, lines 12-16).

Claims 6 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuki (US 6267519 B1) in view of Keeling et al. (US 5481288).

**With regards to claim 6**, Otsuki teaches that the apparatus is capable of a plurality print modes (col. 3, lines 20-23). Otsuki does not teach using a preset standard value when the position adjustment value for a third print mode is not prepared in advance. Keeling discloses using a preset standard value when the position adjustment value (calibration value, col. 11, line 58) for a third bi-directional print mode to be used by the printing apparatus is not prepared in advance (col. 11, lines 57-61).

**With regards to claim 23**, Otsuki does not teach that selecting an adjustment value comprises selecting a preset standard value. Keeling teaches that selecting a first position adjustment value or second position adjustment value comprises selecting a preset standard value (col. 11, lines 57-61).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Otsuki's third print mode adjustment value with Keeling's preset standard value.



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The motivation for doing so, as taught by Keeling, is so that calibration values are set with the introduction of new printheads (col. 11, lines 57-61).

### *Claim Objections*

Claims 2, 8, 19, 24, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**With regards to claim 2 and 19**, the primary reason for indicating allowable subject matter is the inclusion of the combination of the limitations of the printing apparatus capable of mounting a first ink set and a second ink set that have mutually different combinations of inks and being capable of using a first bi-directional print mode that selectively uses inks included in the first ink set and a second bi-directional print mode that selectively uses inks included in the second ink set, wherein both print modes are bi-directional color print modes. It is these limitations found in each of the claims, as they are claimed in the combination, what that not been found, taught or suggested by the prior art of record which indicates that these claims are allowable over the prior art.

**With regards to claim 24**, the primary reason for indicating allowable subject matter is the inclusion of the method steps providing a first and second ink set associated with a first and second bi-directional print modes, respectively; storing first and second position adjustment values associated with the first and second print modes, respectively; and selecting a second adjustment value when no first adjustment value is stored, and selecting a first adjustment value when no second adjustment value is stored. It is these steps found in the claim, as it is

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claimed in combination that has not been found, taught or suggested by the prior art of record, which indicates that this claim is allowable over the prior art.

With regards to claims 8 and 25, the primary reason for indicating allowable subject matter is the inclusion of the combination of the limitations of selecting a position adjustment value for a bi-directional print mode out of a plurality of position adjustment values and outputting a warning when the position adjustment value for a third bi-directional print mode to be used by the printing apparatus is not prepared in advance. It is these limitations found in each of the claims, as they are claimed in the combination, what that not been found, taught or suggested by the prior art of record which indicates that these claims are allowable over the prior art.

The most pertinent art not relied upon comprises: Otsuki et al. (US 6267519 B1), Brenner et al. (US 6318827 B1), and Otsuki (US 6746101 B2).

Each of these references teach a first ink set and a second ink set that have mutually different combinations of inks, and have first and second bi-directional print modes that selectively use inks from the first and second ink set, respectively. However, none of these references teach that both print modes are color print modes, nor do they teach selecting the first position adjustment value when no second adjustment value is available (or vice versa), nor do they teach outputting a warning for a third print mode when the position adjustment value is not prepared in advance.

*Allowable Subject Matter*

Claims 9-16 are allowed.

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The following is an examiner's statement of reasons for allowance: The primary reason for the allowance of claims 9-16 is the inclusion of having a first ink set and a second ink set that have mutually different combinations of available inks through replacement of at least one of the ink tanks, including the limitation of using a first bi-directional print mode that selectively uses inks included in the first ink set and a second bi-directional print mode that selectively uses inks included in the second ink set. It is these limitations found in each of the claims, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

The most pertinent prior art not relied upon comprises: Otsuki et al. (US 6267519 B1) and Brenner et al. (US 6318827 B1).

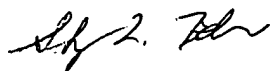
Otsuki and Brenner both teach a first ink set and a second ink set that have mutually different combinations of inks. Neither teaches that the ink sets are mutually different combinations through replacement of at least one of the ink tanks.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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*Conclusion*

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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